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AMENDMENTS TO THE CLAIMS

1. **(CANCELED)**

2. **(CURRENTLY AMENDED)** A passive optical interface apparatus for tracking by a tracking system of an object in space for position and orientation and for interacting with the tracking system, the passive optical interface apparatus comprising:

at least three passive detectable devices trackable for position by the tracking system; and

a mounting device for receiving the at least three passive detectable devices in a known geometry and adapted for being secured to the object such that a position and orientation of the object is calculable by the tracking system as a function of a tracking of the known geometry of the at least three passive detectable devices, at least a first of the at least three passive detectable devices being secured to the mounting device by a pivot joint, the pivot joint operatively connecting said first of the at least three passive detectable devices for pivotal movement between a first ~~indexed~~ position and a second ~~indexed~~ position with respect to the object, a pivotal displacement of said first of the at least three passive detectable devices to any one of said first ~~indexed~~ position and said second ~~indexed~~ position with respect to the object being detectable to initiate an interaction with the tracking system while maintaining the tracking of the object.

3. **(ORIGINAL)** The passive optical interface apparatus according to claim 2, wherein the apparatus comprises four of said passive detectable devices trackable for position by the tracking system, a second, a third and a fourth of the four

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passive detectable devices being positioned in said known geometry and the first of the four passive detectable devices being displaceable with respect to the known geometry, a displacement of the first of the four passive detectable devices with respect to the known geometry being detectable to initiate an interaction with the tracking system.

4. **(CURRENTLY AMENDED)** The passive optical interface apparatus according to claim 3, wherein the first of the four passive detectable devices is displaceable between said first ~~indexed~~ position and said second ~~indexed~~ position with respect to the known geometry, a displacement of the first of the four passive detectable devices from the first ~~indexed~~ position to the second ~~indexed~~ position being interpreted by the tracking system as a first type of interaction, a displacement of the first of the four passive detectable devices from the second ~~indexed~~ position to the first ~~indexed~~ position being interpreted by the tracking system as a second type of interaction.

5. **(CURRENTLY AMENDED)** The passive optical interface apparatus according to claim 3, wherein the first of the four passive detectable devices is biased to said first ~~indexed~~ position by the mounting device, a displacement of the first of the four passive detectable devices away from the first ~~indexed~~ position being detectable to initiate an interaction with the tracking system.

6.-8. **(CANCELED)**

9. **(CURRENTLY AMENDED)** The method according to claim 15, wherein the change is a displacement of a first of the passive detectable devices away from a first ~~indexed~~ position, the

detectable device having four of the passive detectable devices, with the first geometrical pattern being a second, a third and a fourth of the passive detectable devices in a known geometry and the first of the passive detectable devices in the first ~~indexed~~ position with respect to the known geometry, and with the second geometrical pattern being the second, the third and the fourth of the passive detectable devices in the known geometry and the first of the passive detectable devices being away from the first ~~indexed~~ position with respect to the known geometry, the known geometry being fixed to the object such that the position and orientation of the object is calculated as a function of the position and orientation of the known geometry.

10. **(CURRENTLY AMENDED)** The method according to claim 15, wherein the change is a displacement of a first of the passive detectable devices between a first ~~indexed~~ position and a second ~~indexed~~ position, the detectable device having four of the passive detectable devices, with the first geometrical pattern being a second, a third and a fourth of the passive detectable devices in a known geometry and the first of the passive detectable devices in the first ~~indexed~~ position with respect to the known geometry, and with the second geometrical pattern being the second, the third and the fourth of the passive detectable devices in the known geometry and the first of the passive detectable devices being in the second ~~indexed~~ position with respect to the known geometry, the known geometry being fixed to the object such that the position and orientation of the object is calculated as a function of the position and orientation of the known geometry.

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11. **(PREVIOUSLY PRESENTED)** The method according to claim 15, wherein the change from a first to a second of the detectable configurations is interpreted in step ii) as a first type of the interaction signal, and the change from the second to the first of the detectable configurations is interpreted in step ii) as a second type of the interaction signal.

12. **(ORIGINAL)** The method according to claim 11, wherein a first type of the interaction signal is initiated in response to the first type of the interaction signal in step iii), and a second type of the interaction signal is initiated in response to the second type of the interaction signal in step iii).

13. **(PREVIOUSLY PRESENTED)** The method according to claim 15, wherein the interaction response is a function of the position and orientation of the object.

14. **(CURRENTLY AMENDED)** An interaction signal interpreter computer program product comprising code means recorded in a computer readable memory for executing a method for interaction between a tracking system tracking a position and orientation of an object in space and a handler of the object, the object having at least three passive detectable devices with at least one of said at least three passive detectable devices being pivotally displaceable with respect to the object so as to define at least two detectable geometrical patterns and, comprising the steps of tracking a position and orientation of the at least three passive detectable devices ~~and interpreting said position and orientation of the at least three passive detectable devices as a continuous input~~ for calculating a position and orientation of the object as a function of the position and orientation of any one of the detectable

geometrical patterns of at least three passive detectable devices; interpreting a pivotal displacement of said at least one of said at least three passive detectable devices with respect to the object as ~~a discrete~~ an interaction signal from the handler; and responding to the ~~discrete~~ interaction signal by ~~executing a function of the interaction signal interpreter computer program~~ initiating an interaction response to the handler, the interaction response being unrelated to a variation of the position and orientation of the object.

15. **(CURRENTLY AMENDED)** A method for interaction between a tracking system tracking a position and orientation of an object in space and a handler of the object, the object having at least three passive detectable devices with at least one of said at least three passive detectable devices being pivotally displaceable with respect to the object so as to define at least two detectable geometrical patterns and, comprising:

i) tracking a position and orientation of the at least three passive detectable devices ~~and interpreting said position and orientation of the at least three passive detectable devices as a continuous input~~ for calculating a position and orientation of the object as a function of the position and orientation of any one of the detectable geometrical patterns of at least three passive detectable devices;

ii) interpreting a pivotal displacement of said at least one of said at least three passive detectable devices with respect to the object as ~~a discrete~~ an interaction signal from the handler; and

iii) responding to the ~~discrete~~ interaction signal by ~~executing a function of the tracking system~~ initiating an

interaction response to the handler, the interaction response being unrelated to a variation of the position and orientation of the object.

16. **(CURRENTLY AMENDED)** A passive optical interface apparatus for tracking by a tracking system of an object in space for position and orientation and for interacting with the tracking system, the passive optical interface apparatus comprising:

at least three passive detectable devices trackable for position by the tracking system; and

a mounting device for receiving the at least three passive detectable devices in a known geometry and adapted for being secured to the object such that a position and orientation of the object is calculable by the tracking system as a function of a tracking of the known geometry of the at least three passive detectable devices, at least a first of the at least three passive detectable devices being secured to the mounting device by a pivot joint and biased to an ~~indexed~~ position with respect to the object by a biasing means, the pivot joint allowing a displacement of said at least a first of the at least three passive detectable away from said ~~indexed~~ position with respect to the object, said displacement being detectable to initiate an interaction with the tracking system while maintaining the tracking of the object.